

Notice of Allowability

Application No.

10/736,805

Examiner

Scott B. Geyer

Applicant(s)

GILTON ET AL.

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to an amendment filed August 4, 2004.
2. ☒ The allowed claim(s) is/are 48-85.
3. ☒ The drawings filed on 04 August 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>0804</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Information Disclosure Statement

1. The references cited within the IDS document received on August 4, 2004 have been considered.

Drawings

2. The proposed drawing corrections received on August 4, 2004 are acceptable. Accordingly, the drawing objection from the previous office action is now moot.

Specification

3. The modified abstract submitted on August 4, 2004 is acceptable. Accordingly, the abstract objection from the previous office action is now moot.

Claim Rejections - 35 USC § 112

4. The applicant's amendment to claim 62 is acceptable, and the applicant's arguments concerning claims 58,59 and 64-73 have been considered. In view of applicant's amendment and comments, the rejections of those claims under 35 USC 112, second paragraph have been overcome.

Allowable Subject Matter

5. Claims 48-85 are allowed.

6. The following is an examiner's statement of reasons for allowance:

For claims 48-65:

48, 51-57, 60-63 were rejected under obviousness-type double patenting. In response, the applicant filed a terminal disclaimer on August 4, 2004 rendering the double-patenting rejection moot. Claims 49, 50, 58 and 59 are dependent upon independent claim 48. Claims 64 and 65 are dependent upon independent claim 60.

For claims 66-73:

The prior art of record and to the examiner's knowledge does not teach or render obvious, at least to the skilled artisan, the instant invention regarding a conductive line (e.g. a gate stack structure) comprised of two layers of differing materials, which have different oxidation rates, wherein the second layer is recessed inwardly of the first layer, combined with an oxide layer over the conductive line layered material stack wherein the oxide layer has a substantially continuous straight linear outmost edge, as recited in independent claim 66.

For claims 74-79:

Claims 74-79 were noted as allowable in the previous office action.

For claims 80-85:

The prior art of record and to the examiner's knowledge does not teach or render obvious, at least to the skilled artisan, the instant invention regarding:

A method of forming a transistor gate stack comprised of first and second material layers, wherein the two layers have differing oxidation rates, wherein the outer edge profile of the second layer is inward of the first material layer (i.e. recessed),

combined with a an oxidizing step wherein the oxide layer formed has a substantially continuous straight linear outer edge, as recited in independent claim 80.

A method of forming a lateral oxide layer on a transistor gate stack, wherein the transistor gate stack is made of at least two materials, wherein a step of counteract ting for different oxidizing rates is performed on the at least two gate stack materials (i.e. altering the outer edge profiles of the at least two materials), and combined with a step of forming an oxide layer on the gate stack which has a substantially continuous straight linear outer edge, as recited in independent claim 83.

A method of forming a lateral oxide layer on a transistor gate stack, wherein the outer edge profile of the gate stack is changed to counteract for differing oxidation rates, combined with an oxidizing step to form an oxide on the gate stack which has a substantially continuous straight linear outer edge, as recited in independent claim 85.

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

8. The following reference is cited as being related to the instant application: Gilton et al. (6,576,939 B1). However, the applicant has filed a terminal disclaimer in the instant application, in response to a double patenting rejection over US Patent 6,143,611. US Pat. No. 6,576,939 is a divisional of US Pat. No. 6,143,611.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott B. Geyer whose telephone number is (571) 272-1958. The examiner can normally be reached on weekdays, between 10:00am - 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J. Tokar can be reached on (571)272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SBG
August 21, 2004

SCOTT GEYER
PATENT EXAMINER



Robert Pascal
Supervisory Patent Examiner
Technology Center 2800